

The R&D of Fast MCP-PMT for High Energy Physics Detectors

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The Micro-Channel Plate (MCP) is a specially crafted microporous plate with millions of independent channels, which have secondary electron emission capability. The MCP could be used as electronic multiplier amplifier in PMTs. There are two types of MCP Photomultiplier tube (MCP-PMT), large-area electrostatic focusing PMTs (LPMT) and small size proximity focusing PMTs (FPMT) respectively. The LPMT always used in the large scalar neutrino detector for large area photocathode. The small size FPMT is widely used in high energy physics for its fast response, strong anti-interference ability. The MCP-PMT Collaboration Group in China has successfully developed the LPMT for JUNO in 2017, and plan to research a new type of FPMT with multi-anode readout. The FPMT prototypes have been produced with 50ps time resolution, and also the 8X8 anode for the position resolution. We will introduce some design of the FPMTs for the time measurement, and performance with different readout channels.

Requested length

10 minutes

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